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ABSTRACT

This pilot study of the structural characteristics of daily routines of young children also explored aspects of conceptual framework and research instruments. Four data collection instruments were developed. Two of the three retrospective measures used were questionnaires for mothers about their child's routine on the previous day. The other measure was an interview with mothers about the previous day. In addition, a diary that was carried throughout the day by each child was used by all of the children's caregivers to record each child's activities during the daily routine. The daily routine of a child was considered to be the succession of the different settings the child entered during the course of a day. Settings were described in terms of space and material, and of personal and action dimensions. Two questionnaires and a standardized parent interview were constructed for investigating family background factors, and were implemented with three samples. Reported findings concern four questions: (1) Do the data give differing pieces of information about daily routines of young children? (2) Do different types of daily routines exist? (3) Are different types of daily routines connected with family background factors? (4) Do inexpensive retrospective and expensive diary approaches differ in data quality? (RH)

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DRAFT

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DAILY ROUTINES OF YOUNG CHILDREN

Paper prepared for the AERA - Annual Meeting 1988 in New Orleans

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ABSTRACT

Based on ecological approaches, the daily routine of a young child is conceptualized as a sequence of different care settings each of them being characterized by a specific locality, specific persons, and specific activity patterns. The realized combination of care settings, i.e. the daily routine of the child, is regarded as depending on characteristics of the family system. The study is designed as a pilot study within international projects and investigates some aspects of the conceptual framework and of the research instruments. Results are reported concerning the use of different instruments and different samples (91 children aged 0 to 3; 170 children aged 3 to under 7; 611 children aged 3 to under 6). In general, the examined approach seems to be successful, however, some methodological problems have to be considered.

1. INTRODUCTION

Theories and models of socialization generally conceptualize child development as the result of interaction between the child and his environment. Based on this ecological approach which emphasizes the importance of daily living conditions as contexts of the human development (Bronfenbrenner, 1979; Engelbert, 1982; Vaskovics, 1982), the German socialization research is increasingly focussing on day by day living conditions of young children. Some of these approaches, however, only take into account the daily lives of children in a very general or abstract manner (Deutsches Jugendinstitut, 1985; Rabe-Kleberg & Zeiher, 1984), whereas others explicitly investigate the specific aspects of young children's daily lives.

Engelbert (1982) for example analyzes the daily activities of young children, the localities in which they spend their time, the contacts they have with familial and extra-familial persons and the relationship between their activities and their familial or ecological background conditions. Herlth and Schleimer (1982) put special emphasis on extra-familial experiences and their connection to family conditions. Schmidt-Denter (1984) investigates the social environments of young children and the relationship to the parents' socio-economical status and some aspects of the regional background. Another study focusses intensively on the time very young children spend on different activities and on the amount of

time needed by parents and other persons for their care (Institut für Entwicklungsplanung und Strukturforschung, 1985). The studies address different aspects of the daily lives of young children. Important factors for the socialization process are for example seen in the amount of time a child spends on different activities and in different localities or the time he is cared for by different persons.

The study presented here follows the general lines of that research; however, special emphasis is put on socialization settings. The basic assumption is that during the course of a day a young child is not only exposed to one socialization setting (e.g. a preschool), but that he in general experiences different socialization settings which as a sum constitute the daily living conditions. In assessing the socialization environment of a child, it seems to be important to consider not only each of these individual settings separately, but also to investigate the combinations of different settings which the child is exposed to during the course of a day, i.e. the integration of different settings in the daily routine of the child (Rossbach, 1984; Reyer, 1979).

As a result of these considerations the three main objectives of this paper are the following

- to develop a conceptual framework for the analysis of daily routines in early childhood care

- to present some preliminary results of the research carried out in West-Germany

- to discuss some methodological problems in analyzing data of this kind.

This study which is part of the preparatory work for the Preprimary Project of the IEA[1] in West-Germany[2] does not only address content related aspects, but focusses on methodological problems, too. Especially one particular question relates directly to the data collection procedures with which daily routines of young children can be investigated in a valid and economical way. This question is: "To what degree can mothers answer questions in regard to the daily routines of their children for those hours of a day in which the child is cared for by another person?"

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[1] *International Association for the Evaluation of Educational Achievement*

[2] *The pilot study (Research Director: Wolfgang Tietze) was partly supported by a grant from the German National Research Foundation (Deutsche Forschungsgemeinschaft). The Preprimary Project itself is an international comparative study in which the quality of life of young children in about 10 - 15 countries is investigated (Katz et al., 1984)*

2. CONCEPTUAL FRAMEWORK FOR THE ANALYSIS OF THE DAILY ROUTINES OF YOUNG CHILDREN

Young children are cared for in a variety of settings for example in:

- institutionalized settings such as kindergarten, day care center, (licenced) family day care

- semi-formal settings such as neighborhood groups, care by friends or relatives at home or out of home

- familial care settings.

In a more general way, an early childhood care and socialization setting can be defined as a relatively stable social unit which is typically identified with a particular location and in which a certain relatively stable structure of action can be observed. Thus, three dimensions can be distinguished:

- a personal dimension, characterized for example by the number of adults and children, their age and sex

- a space-material dimension, characterized for example by the size of rooms, the availability of outdoor space or the play materials

- an action dimension, characterized for example by the typical games or the participants in actions (cf. Tietze, 1985; see also Barker, 1968; Bronfenbrenner, 1976, p. 203).

Early childhood care and socialization settings can vary in regard to these dimensions[3]. However, the socialization reality of a young child is never determined by just one single setting. Every young child rather tends to participate in a variety of settings during the course of a day. For example: The early morning experience of a given child might be determined by the family setting. This child might spend the later morning time in an institutionalized out-of-home setting (e.g. kindergarten). In the early afternoon he might visit a neighborhood play group and for the rest of the day he might again be cared for by his parents. This kind of succession of different settings during the course of a day - called the daily routine - at the same time constitutes a succession of different socialization experiences for the child. In the kindergarten the child is mainly in contact with peers. The same may be true for the neighborhood play group, which could provide the child with some more intimate experiences with fewer children in a home-based environment. In the early morning and late afternoon the child experiences the intimacy of the family. It seems evident that focussing on just one setting of the child's daily routine (thus isolating it from its context) would represent a limited segment of the actual child's care and socialization.

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[3] Theoretically, there is a fourth dimension which goes beyond the setting itself and describes the organizational anchoring of the setting in a broader context, e.g. the financial support or the legal frame (Tietze, 1985).

In assessing the socialization environment of a given child, it seems important to consider not only each individual setting with its specific qualities separately, but also to investigate the changes between different settings and the particular combination of different settings during the course of a day, i.e. the integration of different settings in the daily routine of a child (Tietze & Rossbach, 1984). It is assumed that the significance of experiences made in one specific setting will alter according to the other contextual settings. For example, a very restricted setting providing only for limited social contacts to other children or adults will have a different effect on the social development of a child if accompanied by settings in which a variety of social experiences is possible as compared to a daily routine in which in almost all settings contacts to peers or adults are limited. Consequently, a shift should be made from the inspection of single settings to the more comprehensive inspection of daily routines. Investigations on child care should be extended to include the combination of different settings during the course of a day and to take into account their degree of compatibility, which is a determinig factor for every child's socialization reality. The emphasis on the investigation of daily routines is inspired by the ecological approach in socialization research which is proposed by Bronfenbrenner (1979). In a related context, Bronfenbrenner defines the 'mesosystem' as the relationship between all settings (microsystems) in which a developing person is actively participating. Special emphasis is put on the 'ecological transitions' between settings. However, Bronfenbrenner restricts the term

'ecological transition' only to the first transition to a new setting in a given person's life, whereas the present conceptual frame expands the term to include all changes between different socialization settings with their different characteristics during the course of a day.

This emphasis on daily routines points to the special role of the family. The utilization of specific settings as well as their combination during the course of a day does not occur as a random constellation. It directly depends on the child's family and their characteristics. The family can be regarded as a system specialized in socialization and directing the learning experiences of a child. In regard to the care of a young child two more specific aspects can be distinguished. On the one hand, the family itself provides for a care environment for the child, i.e. the family constitutes one of the most important early childhood care and socialization settings. On the other hand, the family organizes the daily routine for the child on the basis of the family's needs and the available resources (Kaufmann, Herlth & Strohmeier, 1980; Rossbach & Tietze, 1986). In this respect the family can be considered as an active mechanism selecting settings for the child from its own nuclear-familial resources, from care offers of relatives, neighbors and the social network of friends, from extra-familial private offers (e.g. nurse, family home day care) as well as from public institutional offers (e.g. kindergarten, day care center). The family will integrate these selected settings into the daily routine of their child. This organizational function of the family directly depends on the particular structure of the family system (e.g. one- or two-parent

family, number of siblings, grandparents living with the family) with its specific possibilities for interaction and communication as well as on the social status of the family defined by the socio-economic status, the education level of the parents, their income and the specific housing conditions.

3. METHODS AND DATA SOURCES

The present study focusses on the assessment of several structural characteristics of daily routines of young children, it investigates empirically based types of daily routine (according to their structural characteristics), it analyzes dependencies of daily routines on background factors of the family and it investigates some methodological features in collecting data on daily routines. Developmental outcomes in children were not considered in this study[4]. As a result of the conceptual frame outlined above and of the specific role of the family in organizing the daily routine of the child, the main data source of information on daily routine and on the inner- and extra-familial conditions of participation in different settings will be the family itself.

Based on the definition of an early childhood care and socialization setting which distinguishes three different dimensions

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[4] *It should be considered that a more comprehensive focus on daily routines will not allow for an analysis of each setting in the daily routine in detail as would be possible when focussing on single settings, i.e. with regard to economic and other constraints the different settings during the course of a day can only be assessed in regard to some general features.*

of any given setting (see above) the following data on structural characteristics of the settings were collected:

- space-material dimension: Where was the child cared for? (e.g. at home, family day care home, home of neighbors, kindergarten)

- personal dimension: Who was the main careperson? (e.g. mother, father, teacher, friends, day care provider) Which other persons (adults and children) were present?

- action dimension: What were the child's activities? (e.g. resting, exploring environments, playing with blocks or cards, make believe games) Who is doing the activities with the child? (e.g. adults/adolescents, children of the same age, nobody)

This information was gathered for those settings which a child was exposed to during the course of a day. Thus, the daily routine of a child is operationally defined as the succession of the different settings during the course of a day, which are described according to the above mentioned three dimensions.

Four different forms of questionnaires[5] for data collection were developed. Data are to be filled in for certain time intervals during a child's day from 6 a.m. to 10 p.m.

Two forms were designed to be filled out by mothers in a written investigation. Both relate to "yesterday" which has to be a typical working day from Monday to Friday. I.e. the mothers have to fill out these forms describing their child's daily routine exemplified in the day before. The first form (Form A) addresses children aged 0 to (under) 3 years. The relevant time intervals are thirty minutes long. The second form (Form B) addresses children from 3 to (under) 6 years and uses one hour time intervals. It is assumed that the parents especially the mothers who organize the daily routine for their children can give these retrospective data even for those time intervals of the day before in which they were not together with the child. However, using this approach data have to be restricted to more global, structural features of the last day (i.e. those, which mothers can in principle know about). Consequently, the forms (Forms A and B) do not include specific questions concerning the child's activities performed "yesterday" (action dimension) but are mainly restricted to care persons and care localities (personal and space-material dimensions). Only some

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[5] *Similar instruments were used in two other studies (Engelbert, 1982; Institut für Entwicklungsplanung und Strukturforschung, 1985), however, the degrees of standardization are different from the instruments used in the present study. Since in the main study of the Preprimary Project the instruments have to be used in a bigger sample, the instruments have to be highly standardized. Consequently, time-consuming observation methods like those used by Barker and Wright (1951) in their study of one boy's day have to be excluded, too.*

very global aspects of activities such as sleeping, eating or playing are included[6].

The third form[7] (Form C) relates to "yesterday", too. However, it is designed to be used in an oral interview with mothers and it is based on shorter time intervals (15 minutes). The interviewer has to fill out this form asking the mothers for the relevant information. Since the retrospective approach is used, the form relates mainly to the personal and space-material dimensions. Yet, some information on the action dimension (i.e. activities related to mass media consumption) is collected, too. The fourth form (Form D) is a kind of diary with half hour intervals, which is designed to accompany the child during his daily routine. This diary differs from the other forms mainly in three respects. First, it does not relate to "yesterday" but to a fixed day usually the day after an oral interview with mothers. Second, not only mothers are asked for information, but the diary has to be filled out by all the carepersons during that particular day. For example, if the grandmother cares for the child from 11 a.m. to 3 p.m. then she is the person to fill out the diary (not the mother). Likewise a

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[6] The restriction to care persons and care localities is suggested by results from a Belgian pilotstudy on daily routines, too (Pieltain, 1986). This study showed that mothers have difficulties in remembering their child's activities of the day before, especially for those hours, during which they did not care for the child.

[7] *Forms C and D were only partly developed as a part of the preparatory work for the Preprimary Project of the IEA. The construction of these forms as well as data collection were effected in a research focussing on mass media consumption of children aged 3 to (under) 6 (Research Directors: Dieter Höltershinken and Wolfgang Tietze). This project was funded by the Ministry of Work, Health and Social Welfare of the state of North Rhine Westphalia in West-Germany.*

babysitter has to fill out the diary from 6 p.m. to 9 p.m., if she cares for the child during that period of the day. Third, the diary includes questions concerning the child's activities. As a result of these considerations the diary can be regarded as a kind of observational tool not designed to be filled out by the researcher but by the careperson during the course of one particular day.

In addition to these forms other instruments (two smaller written questionnaires and a standardized parent interview) were constructed for investigation into family background factors.Data were gathered on three samples:

- Sample I: 91 children aged 0 to (under) 3 years from different cities in the state of North Rhine Westphalia. Form A was used to investigate the daily routines of the children (retrospective data with half-hour intervals) (Blum, 1983).

- Sample II: 170 children aged 3 to (under) 7 years from different cities in the states of Lower Saxony and North Rhine Westphalia (one-parent families are overrepresented). Form B[8] was used (retrospective data with one-hour intervals) (Nordlohne, 1985).

- Sample III: 611 children aged 3 to (under) 6 years from different cities in the state of North Rhine Westphalia. Form

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[8] Form B relates to children from 3 to (under) 6 years. However, Sample II includes some children from 6 to 7 years, too. These older children were still visiting the kindergarten.

C (retrospective date with 15 minutes intervals) as well as Form D (diary for "tomorrow" with half-hour intervals) were used (Höltershinken & Tietze, 1987).

The first two samples are slightly biased in favour of families with a social status above average. The families were found via kindergarten or day care centers and/or by private contacts ("snowball system" with different "starting-points"). Sample III, however, represents a well designed, stratified sample using local birth registers.

4. RESULTS

The results presented here relate to four questions of interest:

- Do the collected data give differentiated information on daily routines of young children?
- Do different types of daily routines exist?
- Are these different types of daily routines connected with the background factors of the family?
- Are there any differences in the quality of collected data if the more economic retrospective approach as compared to the more expensive diary approach is used?

To answer these questions data from different samples will be addressed[9].

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[9] *The analysis of data collected in Sample III has only just started. Thus, only preliminary results can be reported here.*

4.1 DESCRIPTIVE RESULTS CONCERNING THE DAILY ROUTINES OF YOUNG CHILDREN

The data collected with each form (Forms A - D) can be arranged in a three-dimensional data matrix with data of different units in a number of variables at different points of time during the day. As a first step it was necessary to construct indicators of the daily routines which condense the information concerning the whole day in some important aspects. Examples of these indicators are: number of hours (resp. half- or quarter-hour intervals) in different localities, number of hours the child is cared for by different main care persons, percentage of time spent in contact with female or male adults, percentage of time spent without contact with other children, contact with either one other child or with a larger group of children. These indicators are based on simply counting the number of intervals during the day which indicate a topic of interest. However, these indicators do not show the actual dynamics of the day. For example, there may be two different children, one is cared for by a neighbor from 10 a.m. to 4 p.m., the other is cared for by a neighbor from 8 a.m. to 9 a.m., 11 a.m. to 1 p.m., 3 p.m. to 5 p.m., and 7 p.m. to 8 p.m., but both children will get the same value in an indicator like "number of hours cared for by a neighbor" (i.e. 6 hours). In order to overcome these limitations other indicators take into account the changes between settings during a given day, thus indicating roughly the dynamics and transitions of that day. By constructing indicators, the three-dimensional data matrix is reduced to two dimensions

(units and indicators)[10].

Table 1 shows, as examples, descriptive results in regard to some of the constructed indicators using data from Samples I and II (retrospective data).

- TABLE 1 -

Children aged 0 to 3 years are cared for during most of the day hours by their families. For about 11.4 hours the mother cares for the child, whereas the father only takes over for 2.1 hours (mother and father together 13.5 hours, i.e. about 87% of the day from 6 a.m. to 9.30 p.m. for which data were collected). There are other care persons such as grandparents and teachers or day care providers, however, their care only sums up to about 1.7 hours (11% of the day). In some very rare cases other relatives, friends neighbors or a babysitter participate in the care of the child, too.

Accordingly, familial care localities dominate. For about 12.3 hours (79%) the child is cared for at home, in the garden or in the playground. For 1.1 hours (7%) the child is at the home of friends, neighbors or relatives and 0.7 hours (5%) at the home of a day care provider or in a day care center. The rest of the day (1.4 hours, 9%) the child spends on travelling between care localities, shopping or at the physician's.

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[10] In regard to methodological problems concerning the analysis of time budget data see Böltken, 1979; Blass, 1980.

In general, there is some variation during the day. About five times during the day the care locality changes and about three times the care person does.

The care arrangements for children aged 3 to 7 years is less marked by their families. Only for about two thirds of the day-time the child is cared for by his mother and father (mother 8.6 hours, father 1.6 hours, together 10.2 hours, i.e. about 64% of the day from 6 a.m. to 10 p.m. for which data were collected). On the other hand professionals such as teachers or day care providers now take a greater part in the care of the child during the day (4.3 hours, i.e. 27% of the day). For the rest of the day the child is cared for by the grandparents or other relatives, friends or neighbors (together 0.9 hours, i.e. 6%). Furthermore, for a small part of the day (about 30 minutes) the child is not cared for by anybody.

The reduction of familial care is reflected in the choice of care localities, too. Again, only for about two thirds of the day (10.6 hours, about 66%) the child is cared for at home, in the garden or in a playground, whereas the time spent in a day care center or kindergarten increases to 4.5 hours (28%). The rest of the day the child is at the home of friends, neighbors, relatives or on the way from one locality to another.

The care situation of children from 3 to 7 is marked by variation, too. About 4 to 5 times during the day the care persons and care localities change.

It does not surprise that institutional care such as kindergarten increases when the children are growing older - there are only very few institutions like day care centers for children under 3 in West-Germany. However, it does surprise that in both samples only very little time during the day is spent by the child's grandparents, friends, neighbors or other relatives, at least when one takes into account that in both samples all children were considered together and only average measures were reported.

Table 1 presents only some of the constructed indicators. Other, more complex indicators have been constructed, too. For example, one indicator points to the social contact with other children during the course of a day: the number of hours during the day without contact to other children. On average, only for 2 hours per day the children in Sample II (without table) have no contact with other children. However, there is a lot of variation: Some children are always in contact with other children whereas there are some children in Sample II with no contact with other children for about 13 hours of the day. Other, more complex indicators relate to the transitions during the day in which some aspects of the social environment remain constant for the child. For example, (data from Sample II, without table), 1.5 times during the day the care person changes without changing the environment and 1.8 times the care locality changes without change of the care person. Again, in regard to these indicators there is a lot of variation in Sample II (ranging from 0 to 5 resp. 6 changes).

In general, the indicators presented here show important aspects of the daily routines of young children. It seems to be a promising approach to collect data in the given manner and to construct indicators of the daily routines as presented here.

4.2 TYPES OF DAILY ROUTINES FOR YOUNG CHILDREN

One main objective of the study concentrates on an empirically based typology of daily routines as the combination of socialization environments during the course of a day: Is it possible to identify groups of children with similar daily routines within each group? Cluster analysis procedures are used to answer this question.

Available cluster analysis procedures, however, show some difficulties in analysing this kind of data, i.e. data of different units in a number of variables at different points of time during a day (three-dimensional data matrix). Thus, the cluster analysis had to be conducted with the above presented indicators of the daily routines which collapse the three-dimensional data matrix into two dimensions (units and indicators). The following indicators were used for the cluster analyses:

- personal dimension: number of hours the child is cared for by the different care persons
- space-material dimension: number of hours the child is cared for at the different care localities

- transitions: number of changes of care persons and care localities. These two indicators of transition can only be interpreted with caution, as they only account for parts of the full dynamics of a child's care situation during a day.

As the following analyses were done with data from Sample I and Sample II (retrospective data with instrument Forms A and B) no indicators of the action dimension could be considered. Different cluster analyses with different numbers of clusters (2 to 10) were calculated (hill-climbing-method; see Steinhausen & Langer, 1977). In regard to the clearness of interpretation, the cluster analyses with four clusters for children aged 0 to 3 years (Sample I) and five clusters for children aged 3 to 7 years (Sample II) were selected. Table 2 illustrates the results (cluster means and cluster sizes) of these analyses for both samples separately. Only those indicators are included in the table, in which differences between clusters occurred. The results concerning Sample II will be presented more extensively, whereas those for Sample I are only roughly touched.

- TABLE 2 -

For children aged 3 to 7 years five typical daily routines can be distinguished:

Cluster 1: Mother care, at home:

Cluster 1 contains 58 children. The children of this cluster are mainly cared for by their mother (11.2 hours). Secondly the children are cared for by teachers (4 hours). However, other care

persons are not available. The main care localities for these children are their home, garden, playground and kindergarten. There are hardly any other care localities for them. At the same time the children of this cluster experience the lowest number of changes of care persons during the course of a day (2.7 changes). Altogether the care situation of the children belonging to Cluster 1 can be characterized as mother care, at home.

Cluster 5: Mother care and other persons, at home:

The daily routines of the children belonging to Cluster 5 (n = 33) are similar to those of Cluster 1. Again, most of the time during the day the children are cared for by their mothers (9.9 hours) and by teachers (3.6 hours). However, in contrast to Cluster 1 other persons such as friends, neighbors, relatives (1.4 hours) are added to the daily routine. Accordingly, the environment at home of friends and neighbors plays a more important role as compared to Cluster 1. Again, the children from Cluster 5 experience a high stability in regard to the care persons: In spite of the higher number of different care persons during the day only 3.5 changes of care persons occur. Cluster 5 can be labelled as mother care and other persons, at home.

Cluster 2: Nuclear family care, at home:

The children from Cluster 2 (n=42) are mainly cared for within the nuclear family. In contrast to Clusters 1 and 5 father care is added to the daily routine (mother and father care sums up to 10.5 hours). Other care persons (apart from teachers) are only included to a relatively small extent. For slightly more time than in Clusters

1 and 5 the children are without care from anybody (0.6 hours). Again, the main care localities are the home of the child and the garden or playground (together 11.4 hours), closely followed by the kindergarten. The children belonging to this cluster experience the highest number of changes of care persons in Sample II (7.0 changes during the day). However, it can be assumed that this high number of changes is due to repeated changes between mother and father. Altogether, Cluster 2 can be characterized as nuclear family care, at home.

Cluster 3: Father care and many other care persons:

Father care (5.9 hours), care by grandparents (1.1 hours) and friends, neighbors or other relatives (0.8 hours) show the highest results for the children of Cluster 3 compared to all other clusters, whereas mother care is decreasing (only 1.4 hours). Likewise, the amount of time the children are not cared for by anybody increases to 1.6 hours. The time a teacher cares for the children is relatively high, too (5.1 hours). Whilst the time spent in a kindergarten increases (5.4 hours), the time at home decreases accordingly (7.1 hours). Only second to Cluster 2 the children belonging to Cluster 3 experience the highest number of changes of care persons (4.6 changes). As a result, they also experience a high variation of care persons during the day and the cluster can be labelled as father care and many other care persons[11].

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[11] *It should be noted, that 8 children in Cluster 3 live in a one-parent family together with their father. Thus the high amount of father care for these children does not surprise. However, the rest of the children come from two-parent families. Surprisingly, one child comes from a one-parent family with his mother. In this case, however, it is not clear if it is actually the father or rather a male*

Cluster 4: Mother and institutional care:

Compared to the other clusters, the amount of time that the children are cared for by teachers reaches the highest results for the children of Cluster 4 (n=15). This amount of time is a high as that of mother care (both about 7.5 hours). Other care persons are only rarely included in the daily routines. Accordingly, the amount of time these children spend at home, in the garden or in the playground is relatively low. The dominating care locality is the kindergarten (6.9 hours). The children experience only a relatively low number of changes of care persons (3.1 changes) which are obviously limited to the sequences of changes from mother to teacher to mother. Thus, Cluster 4 can be characterized as mother and institutional care.

In regard to the daily routines of children from 0 to 3 years four types can be distinguished:

Cluster 1: Mother care, at home:

The children are almost exclusively cared for by their mothers, the prevailing care locality is at home. Changes of care persons or care localities are rare.

Cluster 2: Less familial care, in many places:

Compared to the other clusters both, the amount of maternal care

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friend of the mother who cares for the child.

and the amount of time the children are cared for at home are lower. On the other hand, the amount of care by grandparents (2.2 hours) and by professional day care providers or teachers (4.6 hours) is increasing.

Cluster 3: Nuclear family care, at home:

The children are mainly cared for at home. The main care persons are mother and father who take their turns in the care for their children. Thus changes between care persons (mother and father) are relatively frequent. Equally, the care localities change frequently; however, except at home the children only spend little time in the different places.

Cluster 4: Mother care, in different places:

Similar to Cluster 1 the children in Cluster 4 are mainly cared for by their mother. However, the mother seems to stay with the child in different places during the course of a day (time, spent at home only 9.3 hours, yet 5.6 changes of care localities). Compared to the other clusters the children are slightly more frequently cared for by friends, neighbors and relatives.

In both samples specific types of daily routines can be identified. The results of the cluster analyses reveal a differentiated picture of the daily routines of young children. In general it can be assumed that the different clusters describe different socialization environments during the course of a day not only in regard to the indicators included in the cluster analyses, but also in regard to other aspects of socialization environments

such as e.g. contact with peers or prevailing patterns of action. Table 3 contains a description of the four clusters identified for children aged 0 to 3 years (Sample I) in regard to contact to other persons[12].

- TABLE 3 -

The most striking result in Table 3 is that both types of daily routines which indicate mother care differ considerably in regard to contact with other children and adults. Children in the first cluster (mother care, at home) have a somewhat restricted socialization environment not only because of the predominant care by the mother at home (see Table 2), but also in regard to contact with other persons: Only in 8.7% of the day-time they are in contact with peers and in only 13.4% with adults other than the actual main care persons for a specific time interval. On the other hand, children in Cluster 4 (mother care in different places) have both, a constant care by their mother, connected with the experience of different care localities (see Table 2) and extensive contact with other persons. In 28.7% of the day-time (i.e. about three times as much as those in Cluster 1) they are in contact with peers and in 30.1% with other adults. Children in Cluster 2 (less familial care, in many places) experience the most extensive contact with other children (independent of the age of the other children). It can be assumed, that an increasing number of out-of-home care localities

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[12] It should be noted that the membership to a specific cluster does not depend on the age of the children. I.e., for example, children under one year of age can be found in all clusters.

at the same time provide for more contact with other children. Children in Cluster 3 (nuclear family care, at home) experience a medium amount of contact with other persons - their results are situated between those of Clusters 1 and 2.

The results presented here show that the collected data provide for a meaningful typology of daily routines. The identified types are connected with different socialization environments. It should be noted that those types of daily routine which one at a first glance would consider as identical (e.g. maternal care arrangements) can yet produce extremely different socialization realities for the children concerned.

4.3 DEPENDENCE OF THE DIFFERENT TYPES OF DAILY ROUTINE ON FAMILIAL BACKGROUND FACTORS

The conceptual framework for the analysis of daily routines of young children (see 2.) put special emphasis on the role of the family in organizing the daily routines for their children on the basis of the family's resources. It can be assumed that this organizational function depends on the structure of the particular family system, on the needs of the family members and on the social status of the family. More specifically, it can be assumed that the child's membership to a specific type of daily routine is closely connected with the background factors of the family. In order to analyse this dependence of types of daily routine on the family, discriminant analyses on data of Samples I and II were

conducted. However, the following results should not be overrated in their importance. As the main aim of the instrument development and data collection (in regard to Samples I and II) was to test the approach and the instruments for the use in the IEA-Preprimary Study, data on only very few global family background factors were collected.

The discriminant analyses were conducted using a stepwise procedure. In regard to children aged 0 to 3 years 10 family background variables were considered (education of mother and father, employment of mother and father, income, number of siblings, number of days per week during which mother and father are working outside home, average number of hours per day during which mother and father are absent from home because of their work; additionally age and sex of the child were considered). The stepwise procedure selected only five of these variables. A slightly different set of 12 family variables was included in the discriminant analysis for children aged 3 to 7 years. In the stepwise procedure nine of these variables were selected. For both samples only the first discriminant function will be considered for interpretation. The first discriminant function accounts for 72.8% (Sample I) resp. 60% (Sample II) of the discriminating variance; the canonical correlations with the variables defining the group (i.e. cluster) membership are .62 (Sample I) and .59 (Sample II). Table 4 contains the discriminant coefficients of the selected variables and their correlation with the first discriminant function.

- TABLE 4 -

For children aged 0 to 3 years the discriminant function is clearly defined by the educational level of mother and father and by the amount of time the mother is absent from home because of work: The families which score high in the discriminant function are those in which mother and father have a high educational level and in which the mother is more frequently employed and thus is absent from home for more days per week and on average for more hours per day. Also, less important, the father works fewer days per week outside the home. On the other hand, the negative extreme of the discriminant function is characterized by families with lower educational levels, less employment of the mother (i.e. less absence from home) and slightly more out of home work of the father. Thus, membership to a type of daily routine depends mainly on two correlated characteristics of the family: the educational level of the parents and the employment of the mother.

It can be assumed that a mother who is employed reduces the family care resources and therefore asks for other care resources outside the family. Likewise, a higher educational level seems to produce an educational climate in which early experiences beyond the family are emphasized for the child. Therefore, it does not surprise that Cluster 2 (less familial care, in many places) has the highest average positive value in the first discriminant function (clustercentroid = 1.30), whereas the highest negative value (clustercentroid = -0.86) can be found in Cluster 1 (mother care, at home). The two other clusters are placed in the middle of the function. A slightly higher educational level and degree of mother

employment can be seen as family background condition of Cluster 3 (nuclear family care, at home; clustercentroid= 0.49), whereas a negative value (clustercentroid = -0.26) is valid for Cluster 4 (mother care, in different places)[13].

For children aged 3 to 7 years a slightly more complex picture emerges: At the positive extreme of the discriminant function families with the following characteristics can be found:

- both parents are available (high value in the variable family status)
- no other friends are living together with the family
- there is a higher number of siblings
- mother/father are less time absent from home
- the child has his own nursery.

Some of the less important characteristics are:

- the educational level of the father is higher
- other relatives are living together with the family
- the father's employment is more important and extensive
- there is a higher per head income for every member of the family.

Accordingly, the negative extreme of the discriminant function is built up by families with the opposite characteristics.

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[13] As explained above (see 4.2) Cluster 1 and 4 differ considerably in regard to contact with other children and adults; however, both have negative values in the first discriminant function. The reason for this is that the families of both clusters do not differ in regard to the degree of mother employment (almost none), yet they differ (as can be seen by oneway analysis of variance) in regard to parental education. In general parents of Cluster 4 have a higher educational level than those of Cluster 1.

The high correlation of the family status and simultaneously the relatively low discriminant coefficient show that the discriminant function can well be described with the variable family status; however, combined with the other variables the family status has only less unique discriminative power. Thus it can be stated that the daily routines of children do not just depend on one singular characteristic of the family, but on a complex constellation of familial background factors: On one hand, a more traditional pattern of family characteristics occurs with in general a more favorable social status (higher educational level, more employment, existence of child's own nursery, a higher per head income of the family, and less absence of family members from home) and the tendency, in regard to the family structure, that there are more siblings and that other relatives live together with the family. On the other hand, families with the opposite characteristics can be found with the tendency that friends live together with the family[14].

As already stated, the results of these discriminant analyses should not be overrated in their importance because of the limited set of family background variables included. However, the results show in both samples that the care situation and the daily routines of young children can be considered as a function of the family conditions.

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[14] The centroids of the five clusters identified for children aged 3 to 7 years (see 4.2) are: 0.16 for Cluster 1 (mother care, at home), 0.53 for Cluster 2 (nuclear family care, at home), 0.41 for Cluster 3 (father care and many other care persons), -2.0 for Cluster 4 (mother and institutional care), and -.06 for Cluster 5 (mother care and other care persons, at home).

4.4 COMPARISON OF DIFFERENT FORMS OF INSTRUMENTS

In Sample III (611 children aged 3 to under 6) two different instruments for investigating the daily routines are used for the same children, however, on different days[15]. Form C uses the retrospective approach (asking for the daily routine of "yesterday" in intervals of 15 minutes), Form D, some days later, uses the diary approach in which a diary (with half-hour intervals) accompanies the child on a specific day and has to be filled out by the different care persons on that day. Contrary to Forms A and B, which were used in Samples I and II, Form C is filled out by a trained interviewer in an oral interview situation. Since in both forms (Forms C and D) some identical questions are asked (including some questions on activities), a comparison of the results gained by different forms is possible. However, the data analysis for Sample III has only just started, therefore only few comparisons can be presented here. Table 5 contains the means of some indicators constructed for both forms and their correlations.

- TABLE 5 -

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[15] Form C relates to the day before the oral interview, from D to the day after. However, sometimes (e.g. if the day after is a weekend day, or if the day after seemed too untypical a day) Form D was filled out two or three days later.

In regard to averages the results gained with the two forms are very similar[16]. However, two exceptions emerge: The number of different care persons and the number of changes of care persons is obviously higher for Form C as compared to Form D. The reason can be seen in the use of different time intervals. Form C requires data using intervals of 15 minutes, whereas Form D uses the broader intervals of half hours. Consequently, it is more likely that in Form C a care person who takes only care for the child for shorter periods of time is reported than in Form D. This difference between Forms C and D only affects the care persons. The report of the care localities, on the other hand, seems to be independent of the form used.

Table 5 contains also the correlation of the indicators between Forms C and D[17]. The two days seem to be different for the children. A higher stability is only found in regard to the time, which the child spends in the institutional setting kindergarten, but even the amount of care by parents differs considerably between the two given days. A lower stability is also observed when the

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[16] It should be noted that for technical reasons slightly different operationalizations of the care persons and the care localities had to be used in the two forms. For example: Form C (in which the interviewer writes down the report of the mother concerning the child's previous day) includes the categories "mother", "father", "both parents together", whereas Form D (which has to be filled out by the actual care person) uses "mother (possibly together with father)" and "father (possibly together with mother)". Therefore a direct comparison is problematic.

[17] Pearsons's correlation coefficients were calculated for a first screening of all indicators. However, since some indicators (e.g. number of different care persons) only have very few categories, other correlation measures (e.g. Tau c)seem to be more appropriate and will be used in further analyses.

number of different persons or places and the transitions are considered. These results suggest that children (aged 3 to under 6) are not exposed to a kind of standard situation every day, but experience a changing combination of settings on different days. However, this result can only be generalized with care. Forms C and D do not use identical operationalizations and the study from which these data are reported was not really designed to test the stability of daily routines. The question of stability and variability of daily routines will have to be addressed directly in further research. Some answers are expected from the main study, the IEA Preprimary Project, in which both forms will be applied in West-Germany, using the same operationalizations and in both cases half-hour intervals.

Table 5 includes one indicator which is related to the activities of the children: the number of hours the child watches television. These data were collected in both forms[18]. The correlation between the two forms is again only of medium extent, i.e. the days of the children differ considerably concerning the amount of time they spend watching television. Yet, this result should be considered with care. In Form C the mother has to report data on watching television also for those hours in which she is not together with the child. It might be possible that she does not know (or remember) accurately these data for "yesterday". On the other hand, it can be assumed that the data on activities

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[18] Contrary to Form C, Form D asks for up to three activities for each half-hour. However, the indicator in Table 5 only considers watching television when this activity is filled out as the primary activity.

are more accurate when the care person fills out the diary at the time when the activities take place. Further analysis can address this problem partly by comparing the hours where the child watches television only during the time when the mother cares for the child.

When data from Table 5 and Table 1 are compared some striking results emerge. A first difference can be seen in the number of hours the child is cared for by teachers. Table 1 reports 4.3 hours for children aged 3 to 7 years (Sample II), Table 5 only 1.7 hours for children aged 3 to 6. Yet, this difference cannot surprise. Sample II contains mainly children who attend a kindergarten, whereas in Sample III only one half of the children attend a kindergarten. When considering only kindergarten children (number of hours cared for by teacher = 3.6) the difference is reduced, yet still observable. A second, more important difference relates to the number of changes of care persons for which Table 1 reports 4.3 changes for Sample II using Form B of the daily routine instrument. Several reasons may account for this difference. First, the categories of care persons are differently operationalized in Form B as compared to Forms C and D, and different time intervals were used, too. Second, different samples were used, especially in regard to kindergarten attendance. When the number of changes of care persons is calculated only for the kindergarten children in Sample III (Form C 3.6 changes, Form D 2.7 changes), again the difference is reduced. Third, Form B was used in a written investigation in which there was no assistance for mothers to fill out the instrument, thus, the number of care persons was probably

increased by incorrect entries in the instrument. On the other hand, Form C was filled out by a trained interviewer together with the mother and Form D was intensively introduced, explained and controlled by the interviewer. It can be assumed that the procedures used in Forms C and D will lead to more reliable results.

5. DISCUSSION

The study presented here is a pilot study for a more comprehensive research project. The main objective of the study was to test some apects of the more general approach of studying daily routines of young children. This character of a pilot study has to be reflected when the results are interpreted.

In the methodological perspective one aim was to investigate the degree to which mothers can answer questions concerning the daily routines of their children not only for their own care hours, but also for those hours of the day during which the child is cared for by another person. A satisfying answer to this question would be a prerequisite to balance the demands of the presented conceptual framework with the constrained economical research sources. The results show that the presented economical approach is at least partly promising: In general, parents, i.e. mothers, do know and remember the structural aspects also for the other care settings during the day. Only very few inconsistent or incomplete answers in regard to the personal or space-material dimensions

were found in the used Forms A, B and C. This is especially true if the daily routine instrument is filled out by a trained interviewer together with the mother (Form C). However, results on the activities of children on the previous day should be considered with care. A pilot study of the Preprimary Project conducted in Belgium (Pieltain, 1986) equally shows that the number of inconsistent, incomplete or obviously incorrect answers increases for those hours during which the parents do not themselves take care for their child. For the investigation of activities the diary approach is preferable.

The diary approach, in which a diary accompanies the child on a specific day and has to be filled out by the different care persons on that day seems to be most promising, especially if the interest is focussed on differentiated patterns of activities occuring in the different settings on that day. The main advantages of the diary approach is contained in its prospective character and in that it uses not only the parents but all the care persons during a day as sources of information. However, it is more expensive than using one of the retrospective approaches like Form C.

As a result of these experiences the main IEA Preprimary Project in West-Germany will use both approaches to get information on two days of each child. An instrument like Form C will be used during an oral interview with mothers, however restricted to the personal and space-material dimensions of the daily routines. This less expensive approach will be supplemented by a diary for one of the following days (preferably the day after the

oral interview). The diary will include the activity dimension, too. Since strictly comparable operationalizations will be used some special analyses of the quality of these instruments will be facilitated.

In the content-related perspective the results should not be overrated in their importance. Generalizable conclusions have to be reserved to the main research project itself. In interpreting the results one should also keep in mind that the study is limited to structural aspects of the daily routines of young children. Child-child or child-adult interactions in specific situations are not included. Such an inclusion would have required a different methodological approach (like observation, for example).

First of all it had to be asked if the existing differences in the socialization experiences of young children are reflected in the collected structural aspects of the daily routines. The presented results support this assumption. However, in order to answer this question it was necessary to construct, in a first step, indicators of the daily routines which condense the information concerning the whole day in some important aspects. These indicators are also able to describe the changes between care persons and care localities, i.e. the ecological transitions, which occur during the course of a child's day. In regard to the socialization and development of a child these indicators are of special interest. However, only some indicators, as examples, could be presented here, which have to be refined in further work.

In a second step cluster analyses were conducted with selected indicators in order to construct a typology of daily routines. Four clusters for children aged 0 to 3 years and five clusters for children aged 3 to 7 years were established. These clusters are characterized by different combinations of care persons and care localities as well as different numbers of changes between care environments during the course of a day. Thus, the clusters indicate different socialization environments of children. The cluster analyses also revealed that care arrangement which one at a first glance would consider as identical (e.g. "maternal" care arrangements) can result in extremely different socialization realities for the children concerned. The results of the cluster analyses depend directly on the variables included and the selected sample, thus the results should not be overrated in their importance. However, in regard to both a concise scientific description as well as to social planning of care arrangements it is necessary to reduce the manifold structural information on the daily routines to a well-defined typology.

According to the conceptual framework it can be assumed that the families organize the daily routines of their children on the basis of their resources and needs. Thus, the correlation between membership to a specific type of daily routine and family background conditions were investigated. Even with the limited sets of only some global family background factors it could be demonstrated that the care situation which a child is exposed to during a day is closely connected to characteristics of the child's family. It is of special importance that not only one specific family

factor is decisive, but that the broader context of family conditions has to be considered. Consequently, there is a wide range of possible measures to give support to families and thereby improve the socialization experiences of their children.

With regard to both, educational practice and research the results show the importance of the extension to a simultaneous analysis of settings which constitute the daily routine of a young child. This means that not the isolated settings but the daily routines themselves should be the units under investigation. The expected advantages of this extension, especially with regard to the explanation of further development, are:

- The significance of planned settings (e.g. preschool) can be determined more precisely if the other settings, which the child is exposed to during the day, are incorporated into the analysis.
- Interactions between the various settings within the daily routines can be analyzed.
- A more comprehensive view of the quality of the socialization environment for a child will be possible.
- Indications for the improvement of care arrangements for children in the course of a complete day can be given with more precision.

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Table 1: Indicators of the daily routines

Indicators		Children aged 0 - 3 years mean	Children aged 3 - 7 years mean
Care persons - Number[1] of hours cared for by	mother	11.4	8.6
	father	2.1	1.6
	grandparents	0.8	0.4
	friends/neighbors/ relatives	0.3	0.5
	babysitter	0.1	-
	day care provider/ teacher	0.9	4.3
	nobody	-	0.4
Care localities - Number of hours cared for	at home	10.7	8.1
	outside/garden/ playground	1.6	2.5
	at home of friends/ neighbors/relatives	1.1	0.6
	at day care center/ kindergarten/ private parent-childgroup	0.5	4.5
	at home of day care provider	0.2	0.1
	transition/on the road/ shopping/at physicians	1.4	0.5
Number of changes	of care persons	2.7	4.3
	of care localities	4.8	4.5

[1] "Number of hours" for the older children signifies the number of one-hours intervals. The total number of intervals which could be filled out sums up to 16 (corresponds to 16 hours). For the children from 0 to 3 years data were collected for every half-hour (total number of intervals = 31, corresponds to 15.5 hours). In Table1 the number of half-hour intervals is transformed to one-hour intervalls.

Table 2: Cluster means and cluster sizes[1]

Sample I: Children aged 0 - 3 years

		1 Mother care, at home n = 21	2 Less familial care, in many places, n = 16	3 Nuclear family care, at home n = 21	4 Mother care, in different places n = 25
Care persons - Number of hours cared for by	mother	14.4	6.0	9.0	12.8
	father	0.5	2.6	4.9	1.1
	grandparents	0.1	2.2	0.8	0.8
	friends/neighbors/ other relatives	0.1	0.2	0.3	0.6
	day care provider/ teacher	0.1	4.6	0.1	0.2
Care localities - Number of hours cared for	at home	13.2	8.7	11.4	9.3
	outside/garden/ playground	1.3	1.8	1.2	2.0
	at home of friends/ neighbors /relatives	0.2	1.4	1.2	1.8
	at day care center/ private parent-child group	0.2	1.9	0.2	0.3
	at home of day care provider	0.0	0.8	0.0	0.1
	transition/on the way	0.7	1.0	1.6	2.1
Transitions - Number of changes of	care persons	1.1	3.5	3.9	2.7
	care localities	3.2	5.6	5.3	5.6

Sample II: Children aged 3 - 7 years

		1 Mother care, at home n = 58	2 Nuclear family care, at home n = 42	3 Father care and many other care persons n = 17	4 Mother and institutional care n = 15	5 Mother care and other care persons, at home n = 33
Care persons - Number of hours cared for by	mother	11.2	7.5	1.4	7.4	9.9
	father	0.3	3.0	5.9	0.0	0.6
	grandparents	0.2	0.5	1.1	0.4	0.5
	friends/neigbors/ other relatives	0.1	0.6	0.8	0.5	1.4
	teacher/day provider	4.0	3.8	5.1	7.6	3.6
	nobody	0.3	0.6	1.6	0.1	0.2
Care localities - Number of hours cared for	at home	8.1	8.3	7.1	5.1	10.3
	outside/garden/ playground	3.4	3.1	1.9	1.9	0.6
	at home of friends/ neighbors /relatives	0.1	0.8	0.7	0.9	1.1
	at kindergarten	3.8	3.3	5.4	6.9	3.4
Transitions - Number of changes of	care persons	2.7	7.0	4.6	3.1	3.5

[1] The cluster analyses are based on the daily routines of 83 children in Sample I and 165 children in Sample II.

Table 3: Contact with children and adults (Sample I)

	Type of daily routine - Cluster number			
	1 Mother care, at home	2 Less familial care, in many places	3 Nuclear family care, at home	4 Mother care, in different places
Percentage of time[1] with contact to				
- peers	8.7	20.3	20.4	28.7
- children from 3 to 6 years	20.6	24.2	29.5	20.4
- older children	17.0	16.0	7.8	16.6
- adults	13.4	27.3	15.5	30.1

[1] The table indicates the percentage of time during a day in which a specific contact occurs. For example: In 13.4 % of the whole day, a child from Cluster 1 is in contact with adults (other than the main care person). It should be noted that the four categories of contact are not exclusive, i.e. in one time interval all four forms of contact can occur. The percentage of time spent in contact with other children relates only to the time the child is not sleeping, eating or doing hygiene of the body. The percentage of time spent in contact with adults relates to the time the child is not sleeping.

Table 4: Discriminant coefficients (d) and correlations (r) with first discriminant function

Sample I: Children aged 0 - 3	d	r
education of mother	.30	.61
education of father	.22	.54
number of days per week working outside home-mother	.50	.83
number of days per week working outside home-father	-.16	-.23
average number of hours per day absent from home-mother	.33	.73

Sample II: Children aged 3 - 7	d	r
family status	.10	.65
number of friends living in the household	-.45	-.45
number of relatives living in the household	.18	.10
number of siblings	.55	.43
education of father[1]	.15	.25
employment of father[1]	.08	.25
average per-head income of the family	.26	.16
number of hours per day absent from home - mother/father[2]	-.31	-.36
existence of own nursery	.57	.47

[1] In case of a one-parent family with a mother, education and employment of the mother are substituted.

[2] In case of a two-parent family, this variable contains the number of hours absent from home for the person who normally spends less time outside the home (normally the mother) and therefore has more resources to care for the child.

Table 5: Comparison of indicators from the two Forms C and D (children aged 3 to 6)

indicators	Form C mean	Form D mean	correlation between Forms C and D
Number of hours[1] cared for by parents	9.2	9.9	.40
Number of hours cared for by teacher	1.7	1.7	.76
Number of different care persons	2.6	1.8	.44
Number of changes of care persons	2.8	1.7	.31
Number of different care places	3.0	3.1	.30
Number of changes of care places	4.7	4.9	.20
Number of hours watching television	0.6	0.6	.52

[1] With Form C data are collected in intervals of 15 minutes, with Form D in half-hour intervals. For comparison both data are transformed in one-hour intervals.